

## ABSTRACT

When Internet Protocol (IP) packets or Layer-2 MAC Protocol packets are encapsulated in a MultiProtocol Label Switching (MPLS) packet, one or more labels are assigned to identify the routers of the MPLS network through which the packet has passed. From this information, the underlying protocol (e.g., IP, MAC) can be inferred. In one embodiment, the value assigned to the one or more labels is selected to identify the underlying protocol. In one embodiment, IP packets have label values in a first range and MAC packets have label values in a second range. When the MPLS-encapsulated packets are switched within a load sharing environment, the ranges of the label values indicate the underlying protocol of the packet being switched. Knowing the underlying protocol enables a hash function to be selected that will both preserve packet ordering and effectively load share traffic received from a higher-speed source link across multiple lower-speed links.